

AVIATION

The Oldest American Aeronautical Magazine

DECEMBER 7, 1925

Issued Weekly

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The Aircraft Carrier Langley

Photo Kadel and Herbert

VOLUME
XIX

SPECIAL FEATURES

NUMBER
23

THE MITCHELL COURT MARTIAL
GENERAL PATRICK'S REPORT
AIR TRANSPORT

GARDNER PUBLISHING CO., Inc.
HIGHLAND, N. Y.
225 FOURTH AVENUE, NEW YORK

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SPEED WITH SAFETY

CURTISS-REED METAL PROPELLERS AT THE PULITZER RACES

Total number of planes in races	83
Planes equipped with Curtiss-Reed propellers	70
Planes equipped with other metal propellers	12
Planes equipped with wooden propellers	23
	83 83

Six out of nine winners, excluding the On-to-New York and Model Races, were Curtiss-Reeds.

Every plane in the two high-speed races used these propellers.

At the Schneider Cup Races, Baltimore, all entries with the exception of the Italians used Reed metal propellers. All the world's speed records for straightaway or closed courses, land and seaplane, were made with Reed duriumen propellers.

The above record proves conclusively that for high performance the metal propeller has no equal. And not only is it superior for racing, but is equally efficient and necessary for commercial flying.

Mr. Walter H. Beech, Vice President and General Manager of Travel Air, Inc., Wichita, Kansas, writes:

"In regard to using metal propellers as standard equipment, we are doing this on all commercial planes, and figure this is the rule of the future."

Mr. J. M. Moellenschick, President, Swallow Airplane Manufacturing Company, Wichita, Kansas, writes:

"I want to congratulate you on your metal propeller which I had the pleasure of demonstrating on my recent tour from Wichita to Detroit, Michigan and from Detroit to Long Island, New York."

"I kept a close account on the ground that we used from Wichita to Detroit, a distance of 1000 miles the route we took, and from Detroit to New York over 900 miles. I found that we made the trip on 11% less mileage with the metal propeller than with the wooden one. As we have made this same trip several times in the last few years, I had a good opportunity to make this test."

"There is no comparison between the metal and wooden propeller when it comes to difficult flying through ice and bad storms, etc. From now on, I am here and will for the Metal Propeller."

J. D. Hill, veteran pilot of the Air Mail Service, which uses Curtiss-Reed propellers as standard equipment, says:

"We no longer consider them as mere propellers—they are just propellers."

Record performance, high factor of safety, long life make the metal propeller the most economical investment for every kind of airplane operation.

Specifications and prices gladly furnished for any combination of machine and motor.

Curtiss Aeroplane & Motor Company, Inc.
GARDEN CITY, N. Y.

MANUFACTURERS AND DISTRIBUTORS OF CURTISS-REED PROPELLERS



When Writing to Advertisers, Please Mention AVIATION



THE U. S. AIR MAIL—AND GOODYEAR



THAT 1,500-mile beacon-lit stretch of the U. S. Air Mail route blazes nightly as an announcement that the era of aerial transportation is here!

It's the greatest white way, over which roar the planes carrying heavy cargoes of valuable correspondence. " . . . snow, nor rain, nor wind, nor night, can stay the pilot in his flight."

Nor want of dependable rubber equipment. For Goodyear provides the U. S. Air Mail Service the same source

of supply that has assisted the military and commercial airmen to maintain their progress.

Goodyear agrees with far-sighted Post Office authorities that aerial transportation is even now ready for wider use in the commercial world. Goodyear is ready to help in any way possible.

Goodyear makes everything in rubber for the airplane, balloons and airships of every size and type. Write Goodyear, Akron, Ohio, for any information you want.

THE GOODYEAR RUBBER CORPORATION, a subsidiary of The Goodyear Tire & Rubber Company, holds the U. S. patent and manufacturing rights of Endlesslife-Rubber, and is ready to build Endlesslife airships of all sizes and types for any requirement of commercial service or national defense.

GOODYEAR

AVIATION EQUIPMENT

When Writing to Advertisers, Please Mention AVIATION

Who's Who in American Aeronautics

PUBLISHED BI-ANNUALLY

THE BLUE BOOK OF AMERICAN AIRMEN

Contains One Thousand Biographies of

Aviators, aeronauts, aeronautical engineers, aircraft manufacturers, flying officers of Army, Navy and Marine Corps, Air Mail personnel, aircraft accessories manufacturers, flying field owners, American aces, aeronautical instructors, inventors, National Guard air officers, aeronautical writers, sportsmen, men prominent in aeronautical affairs.

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Name

Address

City

When Writing to Advertisers, Please Mention AVIATION

BOEING AIRPLANE COMPANY

Manufacturers

of

*Military and Commercial
Aircraft*

Seattle, Washington

When Writing to Advertisers, Please Mention AVIATION

load signs were arbitrarily set at 5 lb. per sq. in. of engine displacement, which, so far as is possible, provides for approximately 1 lb. per hp. for engine displacement in terms of engine efficiency.

Interests in the pilot and fuel supply control are necessary in order for the plane to fly, so no reason why gasoline and fuel should be considered as a weak link. For operational purposes, the only words worthy of consideration are that the plane should be capable of carrying a merchandise or payload of its empty weight and fly for a specified distance at given rates of speed.

This resolution will appreciate constructive criticism and suggested methods of improving the present regulations to the end that the largest number of contestants will be eligible, that the results of the race will be decided in competition and not by administrative action to or after the race, that each contestant of the various types of plane available will have a sporting chance to win.

Since, in connection with the suppression of commercial aviation, a large portion of the prize money and trophies are donated by individuals, the Contest Committee feels justified in considering such contest is a natural and proper regulation which must be a great asset with the approval of the prize promoters.

The Detroit Aviation Society desires great credit for understanding the situation of the first extremely poor which necessitated the raising of several thousand dollars in prize money without a chance of any trophy return. The whole race was sponsored by the Detroit Aviation enthusiasts as a matter of civic pride and to solve that they might do their part in the promotion and development of commercial aviation.

Light Plane Development

To the Editor, Airwaves

My article in aviation has attracted me to the subject and I have read everything I could find about its recent developments. I have been drawn to the conclusion that, in the field of light planes, the direction for all future development is commercial aviation. I have seen that you have had very little to say about the light planes in the French Competition. Have you then taken your eyes from recent developments in England as regards aerodynamic advancement? Which here we do in this country that is equal to that?

(Signed) Eugene

A reply to this letter has been received from Mr. E. T. Allen, who has been responsible for a great deal of light plane activity in America. Mr. Allen writes:

This is indeed a delicate question, the discussion of foreign aerodynamic development. The reason little has been said about the French light planes, is that there is little to say. It is easy enough when you can point out triumphal achievements, but when you see no real advancement, no evidence of means of possibilities of the application of modern aerodynamics to design and construction, you feel that silence is the only means open. At the recent Competition, there were no light planes which might not have been designed some years ago. There was easily nothing to compare with the Duguesse light plane of the 1928 Dayton Meet even. And the airplane used in England at the Meet of 1952 and 1954, where the effort was directed into channels of efficiency by rules and prizes, seems to have been lost to the world in the desire to attain "practicality" at any cost. The Duguesse Record of 1925 showed evidence of advantage both in some very interesting measurements, without sacrificing too much to either. What we have to offer the 1955 because appearance in the light plane class at Mitchell Field.

E. T. ALLEN

De Pinedo, of Italy, Completes 34,000 Mile Flight

Comd. Francesco De Pinedo, of the Italian Navy, returned to Rome on Nov. 3, 1955, in his airplane, from a record-breaking 34,000 mile roundtrip flight to Japan, and was given a tremendous reception as he landed on the Tiber.

Aerial Service Corp. to Teach Flying

A complete aircraft organization, including design, construction, operation and training, is the aim of Aerial Service Corp., of Elmhurst, N. Y. Since its organization in 1951, the company has made notable progress in design and construction. "The Aerial Efficiency" as built and after excellent performance tests, was produced by the Air Mail The Mercury II, a seven-engine of its size, designed for speed and air efficiency. Its two service and other classes of commercial flight, has demonstrated that it is an efficient and dependable light carrier.

To round out its activities, the corporation has organized a complete training course at Elmhurst, where many of the famous early pilots trained to fly. Student training is in command, and he under the supervision of Harvey Mansuet, designer of the Mercury plane and a skilled pilot.



A. V. ROSE

One of the first American English Manufacturers of aircraft; his firm recently united the United States to become the first English and American Air Force.

Mufflers on Airplane Engines

To the Editor of Airwaves:

There is no reason in the world why airplanes should be made noisy things and it is this noise that is the most objectionable feature to the layman.

To be sure, the propeller alone would make some noise, as they are designed at present, but most of the noise is from the engine exhaust.

And there is no reason why perfectly useless propellers cannot be designed. They have greatly reduced the noise of exhaust from by perfectly shaping the blades.

The design of an airplane usually involves practically nothing. There is where the real work should go. And it could be a good job, too, without affecting the exterior design of the ship.

We all hope that the present interest in aviation makes the doors of commercial aviation, which some of us have been holding closed for so many years. But this commercial airplane will never be the success it could be, unless it is practically noiseless.

EDGAR OVERBERG,
Santa Barbara, Cal.

A New Night Aerial Advertising Sign

By ROLAND ROHLFS

NIGHT aerial advertising has long been recognized as a highly desirable medium because of its exposure to the attention of the public; any vehicle which needs advertisement is bound to be seen. It has been repeatedly tried but proved to fail, due to the inherent application of the principles involved. Whatever means has been advanced has only strengthened the belief that if a real practical solution of the difficulties mentioned, could be brought about, a field of advertising could be opened that has no present equal.

The following is not only a solution of the problem but also a method of the problem, the time taken to produce, and the cost, the time of advertising from coming into its own but it gives a broad new effect never before approached.

Glenn tubes of five-eighths of an inch in diameter are shaped to form the desired letters. These letters are attached to the underside of the lower wing by special shock absorbing shockproofs of very light construction. The tube letters are filled with neon gas and so constructed that, when a current of electricity is passed through them, they illuminate, giving out a highly penetrating and intense light. This light filling the tubes throughout their entire length, makes for distinctness of outline and transparency of character, never before brought out in aerial display work.

No Reflectors Needed

Since this light does not depend on reflection for its ability to penetrate the atmosphere but works on the air absorption method, a great deal of weight and complexity is eliminated. The only requirement is to guard the under surface of the wings a dark non-reflective color. Each letter, with its attachment and supports, weighs an average of two pounds and, due to its tubular shape, creates very little air resistance.

The source of current to operate the tubes is derived from a specially made air driven electrical generator. This current, after being passed through equalizing coils and step-up



transformers, the resultant high voltage being thus carried down to the tubes. One of the superior points of this whole system is its lightning. The entire operating outfit, including several tube letters weighing less than one hundred pounds. The car resistance is negligible, while, the lack of reflection makes for a greater included angle of visibility. The incidence line of light is not broken by the tubes, they are the letters a solid and definite outline, simply increasing their range of visibility. Furthermore, the deep red color given off, is of the most penetrating character and illuminates the entire scene.

Although the usual width of the "fluorescent" as the tubes is a bare half inch, it appears to widen on the observer's vision, which is contrary to other types of light. At two thousand feet the apparent width of the line of tubes is six inches. No knowledge of tubes has been experienced while operating, though a few were broken while mounting before the bank of landing was completely mastered.

Stimulatory Even By Day

By increasing the intensity of the light, very good daylight results can be obtained at reasonable altitudes. Taking advantage of this, the first public showings were made possible at the Pulitzer new stand where many thousands viewed an airplane as fitted for the first time. Several demonstrations might easily have been made at Coney Island and, as a means of checking the sensational appeal and advertising value were brightly lighted signs, a flight over New York City was recently carried out with astonishingly satisfactory results.

Wide use is expected of this form of advertising superimposing this new system and by employing the services of outside operators, national coverage should be a comparatively easy undertaking.



Commander Ernesto Serrano,
Italian Air Attache

Commander Serrano was born in Brescia Italy in 1909.

He was named as aviator pilot in 1931 and was the first pilot to fly the first Italian airplane in 1931. He was named as aviator pilot in 1931 and was the first pilot to fly the first Italian airplane in 1931. He was named as aviator pilot in 1931 and was the first pilot to fly the first Italian airplane in 1931.

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Aircraft finishes for every purpose



SINCE the earliest days of airplanes, Valspar has been the preferred and standard finish for aircraft of all kinds. Its great durability under exposure to the elements, whether in arctic storm or tropical sun, low temperature or high, has won for it the merited position of leadership in the finishing field.



The Curtiss NC-4, first
Curtiss Valspar plane

And for seaplanes Valspar's well-known waterproof qualities—its ability to stand up whether exposed to fresh or salt water—have made it the logical choice for the finish of hulls, pontoons, wing-surfaces, etc. The NC-4, the first seaplane to cross the Atlantic, was Valsparred, as were most of its prototypes and successors in this field of aviation.



The Shenandoah, first
Valspar gas cell

Valspar, clear or in colors, is particularly well suited for field work where only the ordinary painter's tools are at hand. It is applied easily, even by an amateur, while results are far more satisfactory than with ordinary varnishes. Valspar's factor of protection per unit of weight is unequalled by any other oil type varnish.

During the world war thousands of planes built for the American and foreign governments were finished with Valspar, because it gave service unequalled by any other varnish. It's still doing the same thing; a large proportion of planes built today, including the latest Curtiss plane to win the Pulitzer Cup, are Valsparred.



The J.C. A. 1st plane in
Valspar finish

So also on dirigibles Valspar is widely used, and not alone on wood and metal surfaces. When a coating impervious to hydrogen, but sufficiently flexible to withstand folding was wanted to protect the gold beater's skins used to line the Shenandoah's gas cells, Valspar was the natural selection. And after years of service, tests of this coating showed it to be just as effective as when new!



The Republic F11C plane, like
all the America's, is finished
with Valspar

Aircraft finishes of every type

Nitro-VALSPAR

The Valentine Nitrocellulose Lacquer

AND now comes Nitro-Valspar, which is more than a varnish, more than a lacquer,—a superlative finish designed especially for use by manufacturers desiring a product giving maximum durability *plus* rapidity in application and drying plus minimum weight.

Nitro-Valspar is a true nitrocellulose material which is designed for the rapid spray-gun application, but which can be brushed on if desired.



Dries quickly, adheres perfectly

Nitro-Valspar dries almost as soon as it is applied to the surface, and adheres to this surface with great tenacity, producing a film which is not only tough, durable and impervious to moisture, but which is less easily marred than the best varnish film obtainable.

Film light in weight

In addition the film is considerably thinner than a varnish film and is correspondingly lighter in weight,—a fact of considerable importance especially in lighter-than-air craft.

All finishing operations required on an airplane can be completed in a half-day or less when Nitro-Valspar is employed, so that the cost of finishing is reduced to a minimum through the saving of time, space and labor.

Available in any color

Nitro-Valspar is available in any color, and produces a smooth satin-lustrous surface which is easy to clean, never chinks off and is not injured by grease, oil or gasoline. Clear Nitro-Valspar is the only clear nitrocellulose lacquer possessing adequate adhesion and flexibility for use on wood or metal under the extremely severe exposure to which aircraft are subjected.

Consultants at your service

Valentine chemists and demonstrators are at the service of aircraft manufacturers who are considering or are now using Valentine products. Full particulars concerning Nitro-Valspar and its use will be sent without charge to all who are interested. Address the office nearest you.

MANUFACTURED ONLY BY

VALENTINE & COMPANY

Largest Manufacturers of High-Quality Finishes in the World—Established 1922

New York—425 Fourth Ave. Chicago—161 North Dearborn St. Boston—42 North Ave.
Detroit—10-214 General Motors Building W. P. Fuller & Co., Pacific Coast

It is primarily military aviation which keeps the aircraft industry in Europe alive, today. France, for instance, has, recently, one hundred thousand machines—a more harmful, compared to the 2000 military planes with which she is credited. The new machine built specially for the Maroccan campaign, even thus tripled the number of new commercial machines put into operation this year. England is credited with over a thousand military airplanes, a quantity which is more than twenty times the amount of her commercial craft. Only the German airplane manufacturers depend entirely upon commercial aviation. The Verwinden Treaty forbids her to have military aircraft, so the German government subsidizes aircraft builders and, in that way alone, keeps the industry alive. The air line to be established in our country will put new life into our aircraft industry, but, for the next few years, our industry will have to depend upon government orders.

Europe Leads in Operation

Europe, however, is far ahead of us in operation. Some aviation men in Europe again question whether America has lost much by waiting. They say that we can eliminate the passenger injury that we can pay by their experience. The same argument is raised elsewhere after otherwise. They point out that European lines have been in operation for over five years, and that the men engaged in the work have gained much experience in flying out lines, establishing and operating airways and landing machines, freight and passenger. The men is always kept busy only through experience, how to handle traffic, not down overhead and maintain in operation, how to interest the public and develop passenger and freight traffic, even how to interest investors.

Importance of General Organization

Airline operations are as important to all traffic as terminals for railroads and airports for shipping, and the methods used at terminals today are no longer those of three years

ago. Each great nation, such as England, Le Bourget, Amsterdam, Baguelin and Berlin, has been developed according to its location, its relation to national and international air traffic, and the special needs of the country. Air routes can only be determined by experimenting.

Germany Reorganizing

The airlines of today are already being criticized as unscientific, as developing, developing unnecessary competition, and not meeting the territory most favorable to air traffic development. Germany at present has most of her air line industry from Berlin, private groups, advantage, but not a system meeting commercial demands. Germany are now beginning to realize that commercial and military air interests are not in every way identical. There is talk of incorporating an airline in that two great trunk lines running east and west and two running north and south will serve as the basis of air transportation, with local lines, according to demands, connecting and connecting with the main line traffic. At present every enterprise line seems to be installed on the same line, but the air line are already refusing to make demands or shift lines to suit individual cities. They advise lines to establish their own lines, so as to connect with the main line traffic. A delenda in eastern Germany was advised, for instance, to provide a six-passenger machine, large a pilot and machine, and establish a schedule, so that mail and passengers could make direct connections with the two main air lines running a hundred miles on either side of the river. Germany is rapidly learning by experience. We still have time to go on. Our problems are not those of Europe. We have long distances, oceanic routes, many population centers, such as no European country has had to contend with. The time to be established are pioneer lines. They may be covering many territories, meeting commercial needs, successfully competing with railroads, steamships and bus lines. Operating experience alone can determine this.

CHANGE IN PRICE

WITH THIS ISSUE

DECEMBER 7th

THE PRICE OF

AVIATION

will be

15 CENTS

THE YEARLY SUBSCRIPTION PRICE
OF \$4 WILL REMAIN THE SAME.

THE GARDNER PUBLISHING COMPANY
225 FOURTH AVENUE
NEW YORK CITY

PLYWOOD

Water Resistant Panels

Made According to
Government Specifications
Any Size or Thickness

New Jersey Veneer Co.

Paterson, N. J., U.S.A.



JOHN A. ROEHLING'S SONS CO., TRENTON, N.J.

HANGARS - AIRPORTS - AIRWAYS



Designers and Builders

of Complete

HANGARS - FLYING FIELDS - AIR PORTS
AND
AIRWAYS

INCLUDING LIGHTING SYSTEMS

FOR
NIGHT FLYING

WILLIAM E. ARTHUR & COMPANY, INC.

Aerostatic
Engineers and Builders

30 PARK AVE.

NEW YORK CITY

When Writing to Advertisers, Please Mention AVIATION

London to Cape Town Flight

Capt. Alan Cobham, the British commercial pilot, started from London on Sunday, November 15, to fly to Cape Town, the southernmost point of Africa. The trip will cover more than 5,000 miles in the air. That at it will be above twenty-four hours after take-off—over almost unknown and hilly landing aerodromes and dense forests, where landing may be a matter of death peril. With Cobham, will go two companions, a mechanic and nurse attendant.

Cobham recently flew to India with the British Air Yacht Marston, for Dr. Schwan-Hausen. Another on that basis.



Aero Photo

The DVI 50 in test

The DVI 50 is fitted with a 350 hp. Armstrong-Siddeley "Pigeon" radial air cooled engine and a small radial engine underneath the main engine and wing (photo).

best trip was the southeast, Elkhart, who will accompany Cobham on the projected Cape Town flight. They will also be a De Havilland 50 engine.

The route will be from London via Fies, Berlin and Adana, to Cairo. There the real peril will begin. The flight will continue up the Nile Valley to Wady Halfa, thence to Khartoum and Kertiss, thence west of the White Nile to Khartoum, to Uganda and to the northern shore of Lake Victoria. Leaving the eastern lake shore, the flight will then pass over what was German East Africa, in Lake Tanganyika and thence, via northern Rhodesia, Livingston, Bechuanaland, Johannesburg and Port Elizabeth, to Cape Town.

The Sahara, over portions of Africa, which are virgin territory to stream, is 5,000 miles, which they expect to cover in a week. The regular journey by motor, railway, boat and inland waterway takes about twenty-five days and travels 6,000 miles. In some parts of this route, landing fields have been provided. Their preparation, sometimes has considerable expense out the desert people and taking themselves in from. Overland, sometimes the field had to be covered measuring up to 24 ft. back and 35 to 45 ft. in diameter.

Cobham expects to be back in London within two weeks. He and his companions are taking on their speed tropical sailing, emergency relief, gear for checking gear and light carrying outfit, in case of forced people (photo).

WACO

Real performance in a three place ship with a stock OX-5 motor

Highest Speed
Highest Cruising Speed
Lowest Landing Speed
Best Speed Range
Quickest Take Off
Highest Angle of Climb
Lowest in Price

Steel Fuselage
Steel Engine
Oleo Type Landing Gear
Thirty Seven Gallon Fuel Tank
Free Air Radiator

Do you want the booklet?

THE ADVANCE AIRCRAFT COMPANY
TROY, OHIO

At Your Service

Aero Supply Mfg., Co.
Inc.

Manufacturers and Distributors

of
Airplane Accessories
and Supplies

Call on us for anything. We'll help you

College Point, Long Island, New York

To the Editor, Airman:

Have noticed a discussion in your columns between Mr. Black and Mr. Colby. You probably will be interested to know that I introduced, and there was carried to the final result of the National Aeronautic Association, the following resolution:

"THE IT RESOLVED By the National Aeronautic Association in Convention Assembled—That we recommend to each City at which the International Air Races may be held, enclosing your brochure be held that they make arrangements whereby such accredited Delegate and Alternate to the Annual Meeting of The National Aeronautic Association upon application of the Convention Rules and their certified Credentials shall with such reasonable restrictions as their may deem proper be permitted during the time the Races are to be so open that part of the Field where the racing ships are flown when not racing and be permitted to get a reasonable clear view of said races, the holder of whether such Delegates and Alternates shall be required to pay the necessary admission charge to the Races to be optional with said City."

THOMAS J. LORAN

Rowe Not Disqualified

In the description of the New York Times, (March 11, 1925), it was stated that Rowe was disqualified in Event No. 1. Mr. Rowe was not disqualified and carried the required amount of ballast.

Swirel Join Leoning Company

LEON A. SWIREL, who, for the last five years has been a lieutenant in the Army Air Service, and who, prior to that time was with the Thomas Motor Aircraft Company at Albany, N. Y., has joined the Leoning Aeronautical Engineering Corporation, where he will be in charge of the Company's inspection work.

Welded Steel Tube Construction

In a paper on "Welding of Tubes and Alloy Steel Telling for Aircraft," and before the International Aeronautic Association at Chicago, Nov. 18, J. B. Johnson, Chief Materials Section, Engineering Division, Army Air Service, Dayton, Ohio, brought out the following fact: That all of the new design of aircraft used by the United States Army, from the standard 2,500 lb. motor to the 12,000 lb. bomber, have welded steel fuselages. This means that, after extensive tests, the properly made welded steel will have accepted an absolutely reliable for the most exacting service.

Metal Package Construction

For Package construction, two types of steel tubing are used: (1) Carbon content, 0.20 to 0.25 per cent, tensile strength not less than 55,000 lb. per sq. in., yield point 35,000 lb. per sq. in.; (2) A chrome-nickel steel, with minimum tensile strength of 70,000 lb. per sq. in., a yield point of 40,000 lb. per sq. in. and the following chemical analysis:

Carbon	0.15 to 0.18
Chromium	1.00 to 1.25
Nickel	0.50 to 0.75
Manganese	0.25 to 0.35
Phosphorus	0.01 to 0.02
Sulfur	0.005 to 0.01

Chrome-nickel steel is used where high stresses are encountered, since welding causes distortion or reduction in the strength of this alloy. In building both types of tubing, a low-carbon welding rod (carbon 0.05 per cent), temperature 0.15 to 0.20; sulfur, 0.01 maximum; phosphorus, 0.01 maximum) has been found most satisfactory.

A study of failures, which had occurred in welded structures, showed that in every case, lap-joint welding on pipe design was responsible. The whole character of correct design was gone into long thoroughly in the paper, the discussion being followed by a series of views of destruction tests on lap-joint structures.

MONUMENTAL AIRCRAFT CO.

Office
1030 N. CALVERT ST.
BALTIMORE, MD.

Warehouse: College Park, Md.

Announcement to all users of aircraft

Just off our presses our new 1925 catalogue No. 2. It contains some attractive prices and bargains of steel resistant to rust and very convenient with sections. These bargains are made possible by the enormous volume of our business. We will gladly send you this catalogue. Write for it.

SOME EXTRACTS FROM IT:

Crank Shafts	-\$10.00	Engine Man	-\$1.00
Rollers	-\$12.00	Valve Train 20 H.P.	-\$1.50
Tools (Shop)	-\$15.00	Brass Hacks	-\$2.00
Tools, D.H.	-\$1.00	Small Crankshaft	-\$12.00
Set of landing gear parts	-\$1.00	Washers	-\$5.00
Steel, Alumin. (good low alloy) per foot	-\$1.00	Pin, 1/2 inch	-\$1.00
Complete set of 80 parts	-\$1.00	New 1/2 inch wings	-\$15.00
Engine magnets	-\$1.00	Washers, 1/2 inch	-\$1.00
Aluminum	-\$1.00	Washers, 1/2 inch	-\$1.00
Steel pipe	-\$1.00	Washers, 1/2 inch	-\$1.00
Chrome	-\$1.00	Washers, 1/2 inch	-\$1.00
Steel pipe	-\$1.00	Washers, 1/2 inch	-\$1.00
Chrome	-\$1.00	Washers, 1/2 inch	-\$1.00

A BIRMINGHAM OPPORTUNITY: Machine, 300 H.P., 1000 lbs. weight, new, but not in best condition, original cost complete is \$15,000.00. Write for it.

"THE LEVIATHAN OF THE AIRCRAFT FIELD"

Write for it to Airman, Please Mention #111111



WRIGHT-BELLANCA SIX SEATER

Powered With

WRIGHT WHIRLWIND 200 H.P. AIR COOLED ENGINE FOR COMMERCIAL SERVICE

WRIGHT-BELLANCA EFFICIENCY

With 1000 pounds pay-load, the Wright-Bellanca won the Efficiency Race at the New York Air Races—scoring 53% more points than the nearest competitor. With full load this plane makes 132 miles per hour, has a landing speed of 42 miles per hour, climbs 900 feet the first minute. It cruises easily at 100 miles per hour, using only 115 of its 200 horse power. At cruising speed the gasoline consumption is $12\frac{1}{2}$ gallons per hour, or 8 miles per gallon. Rugged construction with high safety factors; ample cargo space—122 cubic feet in cabin; comfortable accommodations including cabin heaters, excellent vision for both pilot and passengers; all make for commercial efficiency. For detailed information write for Bulletin No. 14.

Orders for Wright-Bellanca planes are being taken now for deliveries early in the spring. The price complete with Whirlwind engine is \$12,000 f.o.b. Paterson



WRIGHT-WHIRLWIND ECONOMY

For commercial service where reliability, durability and economy are essential, consider an engine so reliable that Cuban pilots in land planes constantly fly to the Isle of Pines over 40 miles of ocean. An engine so durable that Huff-Daland Dusting pilots flew 14 of them throughout their season without even uncrating their two spare engines. So economical that commercial air lines are using them in preference to motors of lower first cost. Such performance is justified by the years of continuous improvement, by the wealth of practical experience gained in producing hundreds of these engines, by the elimination of water cooling troubles, and by the Wright Aeronautical Corporation—the largest manufacturers of aviation engines in America. For detailed information write for Bulletin No. 8.

WRIGHT AERONAUTICAL CORPORATION
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